

CLAIMS

1. In a stringed musical instrument, the combination comprising:

A. a plurality of musical strings, each of which
5 has a vibration section for defining a musical tone; and

B. a soundboard positioned to interact with the string vibration sections to enhance musical tones produced by vibration of said string sections, said soundboard being made of a plurality of composite material laminates comprised of one or more fibers and a polymeric resin with all fibers in said laminate being inorganic.

2. The stringed musical instrument of claim 1 where at least one of said laminates include particulate matter defining a filler to color the response of the same to sound vibrations.

15 3. The stringed musical instrument of claim 1 wherein each of said laminates is comprised of between about 40 and 60 percent resin, between 0 and 10 percent filler, between about 30 and 50 percent carbon fibers, and between 0 and 20 percent glass fibers.

20 3/ 4. The stringed musical instrument of claim 3 wherein at least some of said laminates are made of 50 percent resin and a
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fiber selected from the group of 50 percent carbon fibers and 45 percent carbon fibers with about 5 percent glass fibers.

4/5. The stringed musical instrument of claim 3² wherein the majority of said soundboard has a thickness in the range of ^{essentially} between ~~about~~ .02 inches and .06 inches.

5/6. The stringed musical instrument of claim 5⁴ wherein said soundboard has a thickness of between ^{essentially} ~~about~~ .03 and .05 inches.

6/7. The string musical instrument of claim 1^{3 2} wherein said soundboard is generally planer with said plurality of said strings on one side thereof, and one or more blade stiffeners project outwardly from selected locations on the opposite side thereof.

7/8. The string musical instrument of claim 1^{3 2} wherein said soundboard is generally planer with said strings on one side thereof passing over a bridge saddle and one or more additional laminates of a composite material are provided on the side thereof opposite said bridge ^{Saddle} to reinforce the ~~same~~.

8/9. The stringed musical instrument of claim 8^{ab 7} wherein at least one of said additional laminates is selected to dampen high frequency overtones produced at said bridge.

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B. a sound resonator positioned and configured to receive vibrations indicative of said musical tone, said resonator having at least two resonator defining surfaces selected to minimize the production of standing sound waves thereat.

10 ~~10~~ 13. The stringed musical instrument of claim ~~12~~⁹ wherein at least one of said resonator defining surfaces is textured to scatter sound waves which are reflected therefrom.

10 ~~11~~ 14. The stringed musical instrument of claim ~~12~~⁹ wherein at least one of said resonator defining surfaces is porous to dampen sound waves impinging thereon.

12 ~~12~~ 15. The string musical instrument of claim ~~12~~⁹ wherein at least one of said resonator defining surfaces has a density at such surface of between ~~about~~^{essentially} 10 and 50 lbs/ft³.

15 16. In a string musical instrument, the combination comprising:

A. a plurality of musical strings, each of which has a vibration section for defining a musical tone;

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20 B. a body positioned to interact with the vibration sections of said strings to produce musical sounds, and a neck extending from said body to which said strings are secured and maintained in tension at said vibration sections, said neck

including a plurality of composite laminate materials at one end that extend into said body to integrate said neck into said body and provide the support required by said neck to maintain said strings in tension.

5 17. The stringed musical instrument of claim 16 further including a soundboard which receives musical tones from said strings and passes them on to a resonator defined at least partially by said body, which resonator includes at least a side wall and said plurality of composite laminates at said end of
10 said neck extend into said resonator and along the interior surface of said side wall.

14 18. The stringed musical instrument of claim 16 ~~further including a soundboard positioned to interact with the string vibration sections to enhance musical tones produced by~~
15 vibration of said string sections, said soundboard ¹³ ~~also being~~ ^{TT wherein} made of a plurality of composite material laminates.

19. A composite guitar body having a back and side walls with said back and side walls containing layers of a laminate material providing said body with sufficient hardness and
20 stiffness to define shape and provide a desired stiffness, said body further including a relatively low density and well damped laminate material and an inner layer which is selected to minimize standing waves, said body being in combination with a

neck having carbon fiber reinforcement and extending within said body to provide desired stiffness and resistance to warpage.

20. In a method of making a stringed musical instrument having a plurality of musical strings, each of which has a vibration section for defining a musical tone, and a body for interacting with said strings to produce musical sounds which body includes a soundboard, the step of selecting a plurality of composite laminate materials from which to make said body to tailor the response of said body to vibration of said string sections.

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